at incorrect doses (e.g. under dosing) and/or for a long duration. Consequently, multiple targeted AMS strategies have evolved and have been shown to improve antibiotic utilization and favourably impact on hospital ecology including bacteriological and clinical outcome.

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Date: Thursday, April 3, 2014
Time: 10:15-12:15
Room: Room 1.40

Role of antimicrobial stewardship (AMS) & strategies for appropriate antimicrobial therapy

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Antimicrobial Stewardship (AMS) is a new "buzz word" that has resonated across the world because of the pandemic of antimicrobial resistance but is in essence a rehashing of the classical teachings that have always been part of every ID fellowship and medical residency. Its mantra is selecting the most efficacious, narrowest spectrum and cost effective therapy to treat the most likely pathogens at the site of infection. It is essentially a TEAM effort utilizing multiple elements including formulary restriction, preauthorization and concurrent or post-therapy review and feedback. Supplemental strategies include education, de-escalation, streamlining, dose optimization, iv to po conversion and automatic stop dates. Successful programs also need microbiology and culture stewardship, environmental services and infection prevention elements. Despite these efforts the C-Suite must often be educated and convinced that AMS is a Quality measure related to patient outcomes and not just a budgetary line. Targeting abused and unnecessary antibiotics and overly broad or ineffective therapies coupled with attention to emergence of bacterial resistance are key elements of AMS. Problem organisms include resistant P. aeruginosa, ESBL E. coli, Carbapenemase-resistant Enterobacteriaceae and Acinetobacter spp. With the emergence of ESBL E. coli ST 131 H30Rx whose global clonal expansion and its disproportionate association with sepsis has engendered the use of carbapenems as the treatment of choice in geographic areas of high prevalence and specific diseases as pyelonephritis and bacteremia. The emergence of multi-resistant P. aeruginosa has been related to the selective pressures of overuse of expanded cephalosporins, piperacillin-tazobactam, fluoroquinolones and class II carbapenems. CREs, which are often clonal, have emerged with the majority of reported cases selected by non-carbapenem antibiotics and require intense augmented Infection Control preventions to stop spread. Appropriate AMS therapy is a quality measure to improve morbidity and mortality that also can reduce length of stay with collateral financial benefit as well as improving the resistance rates.

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Pseudomonas resistance in hospital setting; why pseudomonas sparing is an important AMS strategy

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Pseudomonas aeroginosa is an opportunistic pathogen affecting patients with reduced immunity either due to treatment or disease. It is associated primarily with device related infections such as ventilator associated pneumonia and catheter related blood stream infections. Indeed, P. aeruginosa is an important nosocomial pathogen and among the leading causes of ventilator associated pneumonia, bacteremia, and surgical site infections. P. aeroginosa is hard to treat. It is intrinsically resistant to most antibiotic agents, and to the handful anti-pseudomonas agents it is acquiring resistance rapidly under antibiotic pressure. Therefore, to preserve treatment options against P. aeruginosa, it is important to reduce anti-pseudomonal antibiotic pressure. Antibiotic stewardship programs aim is to improve the adequacy of antibiotic pressure and to balance between the need for early effective therapy to treat an infection with the need to reduce antibiotic pressure in order to reduce side effects, toxicity and adverse outcomes in the individual patient as well as to preserve antibiotic for future use. Selection of antibiotics should be targeted to the pathogens that likely affect the specific patient. This decision is complex; it requires understanding the patient background and condition, the severity of diseases, and the local microbiology and epidemiology. Nevertheless this is the most important decision in antibiotic prescribing, and has particular importance when considering anti-pseudomonal treatment. Antibiotic stewardship programs should provide advice and tools that will facilitate stratification of patients into risks categories of infection with P. aeruginosa, with other resistant gram-negative bacteria, and the risk in delay of appropriate therapy. This risk stratification should be based on various exposures including to the healthcare setting and to antibiotics, the patient medical history and the local epidemiology. Successful antibiotic stewardship will improve patient outcomes and will reduce antibiotic pressure.

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